

REMARKS

In reply to the Office Action of September 18, 2008, no claims have been added, canceled, or amended. Accordingly, claims 1-4, 6-15, 17-25, 27-28, 30-31, 33-49, 52, and 54-64 are pending in this application, with claims 1, 13, 17, 52, and 64 in independent form.

Applicants submit the following remarks.

Claims 1-4, 6-10, 13, 15, 17-25, 27-28, 30-31, 33-40, 43-46, 52, 55-63, and 64 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Arndt (U.S. Patent No. 6,376,902, “Arndt”) in view of Kinsman (U.S. Patent No. 6,482,674, “Kinsman”). The Action admits that Arndt “does not disclose a separately manufactured thermal connecting part disposed in said opening and fastened into said mount part to form an electrical connection with the at least one external electrical connecting strip” (Action at page 2).

However, the Action purports to find this disclosure in Kinsman, stating with reference to Figures 1B and 1C in Kinsman that the disclosed semiconductor packages include a “separately manufactured thermal connecting part 48 disposed in an opening and fastened into the mount part (where the chip 32 is mounted) by an adhesive 52 to form an electrical connection with at least one external electrical strip 38” (Action at pages 2-3). The Action further alleges, therefore, that “it would have been obvious ... to modify Arndt by including a separately manufactured thermal connecting part disposed in said opening and fastened into said mount part to form an electrical connection with the at least one external electrical connecting strip” (Action at page 3).

Applicants respectfully disagree that Arndt and Kinsman can be combined to yield the subject matter of the pending claims. Claim 1 covers leadframes for radiation-emitting components and includes, in part, a mount part having “an opening formed therein and extending completely through the mount part.” Further, claim 1 requires a thermal connecting part that is “disposed in said opening and fastened into said mount part.” Although the Action proposes introducing Kinsman’s mounting plate 48 into Arndt’s structural element, Applicants can find no sufficient reason or suggestion in either Arndt or Kinsman for doing so.

By implication, the Action would appear to raise two possible motivations for introducing Kinsman's mounting plate 48 into Arndt's structural element. The first of these is to "form an electrical connection with the at least one external electrical connecting strip" (Action at page 3). However, Applicants note that Arndt's leadframe 7 is a continuous member (see, e.g., Figure 1A of Arndt) and therefore there is no reason to introduce a bridging mounting plate 48 as shown, for example, in Figure 1C of Kinsman, between points on leadframe 7. Unlike in Kinsman, chip 1 in Arndt is not positioned on a separate plate or leadframe component. Instead, chip 1 is "attached to a chip carrier part 2 of a lead frame 7" (Arndt, col. 4, lines 50-51). In other words, chip carrier part 2 is merely a portion of continuous lead frame 7, not a separate component that requires an electrical connection to any of external connections 4, 5, or 6. Moreover, connecting a mounting plate between leadframe 7 and external connection 9 in Arndt's element would cause an electrical short, rendering the element inoperable. Accordingly, there is no reason why Kinsman's mounting plate would be introduced into Arndt's structural element to form an electrical connection.

The second reason that the Action might suggest for introducing mounting plate 48 from Kinsman is "to improve heat transfer from the chip to the outside" (Action at page 3). Once again, however, Arndt's leadframe 7 is a continuous component formed of a metal. Applicants have been unable to find any evidence suggesting that heat conduction would be improved in any way by introducing Kinsman's mounting plate 48 (which would presumably contact leadframe 7 through some kind of "thermosetting adhesive, or a thermoplastic adhesive" (Kinsman, col. 3, lines 51-52)) into Arndt's structural element. Moreover, Arndt already discloses that "the chip carrier part 2 with the external connections 4, 5, 6 serves in this case ... as a thermal connection for heat conduction away from the LED chip 1" (Arndt, col. 4, lines 64-67). Accordingly, there is no reason to introduce Kinsman's mounting plate into Arndt's structural element to improve heat transfer.

Nonetheless, even if, for the sake of argument only, Kinsman's mounting plate was introduced into Arndt's element (which Applicants do not concede), Applicants still do not believe that the resulting combination would yield the leadframes covered by claim 1. To the

best of Applicants' understanding, the Action purports to replace a portion of leadframe 7 in Arndt's element – the portion corresponding to chip carrier 2 that supports chip 1 – with Kinsman's mounting plate 48.

However, in such a configuration, Kinsman's mounting plate 48 – which would presumably correspond to the “separately manufactured thermal connecting part” recited by claim 1 – would not be positioned *in an opening* that extends *completely through the mount part* as required by claim 1. The Action refers to chip carrier 2 as the claimed mount part (Action at page 2). More generally, perhaps, leadframe 7 – of which chip carrier 2 represents a portion – might be considered to best correspond to the claimed mount part. With this in mind, if Kinsman's mounting plate was introduced into Arndt's element, Kinsman's Figure 1C appears to suggest that mounting plate 48 would be attached via adhesive, as noted above, to bridge disconnected portions of leadframe 7. But, as shown in Kinsman, mounting plate 48 (e.g., the claimed “thermal connecting part”) would therefore not be positioned in an opening then extends completely through leadframe 7. Instead, mounting plate 48 would merely be attached to the underside of leadframe 7 via adhesive – it would not be fastened *into an opening* in the leadframe, as claim 1 requires.

Moreover, claim 1 further recites that the thermal connecting part includes “at least one chip mounting area and a reflector well surrounding said chip mounting area.” Neither Arndt nor Kinsman discloses a thermal connecting part that includes a reflector well and as a result, any purported combination of Arndt and Kinsman would not include the claimed reflector well. To the contrary, as shown in Figure 1B of Arndt chip 1 is merely positioned atop leadframe 7 in the region corresponding to chip carrier 2. The reflector well – to the extent it exists at all in Arndt, is formed in foundation 10, not in leadframe 7. If Kinsman's mounting plate 48 was introduced into Arndt's element, then as best Applicants can determine, the LED chip would be positioned on mounting plate 48 as shown in Figures 1B and 1C of Kinsman. But in Kinsman, there is no reflector well surrounding the mounted chip, and Applicants have been unable to find any disclosure in Kinsman that relates to such a well.

For all of the foregoing reasons, Applicants believe that claim 1 is patentable over both Arndt and Kinsman, and respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a).

Independent claim 13 covers leadframes that include, in part, a mount part having “an opening formed therein and extending completely through the mount part.” Further, claim 13 requires a thermal connecting part that is “disposed in said opening and fastened into said mount part.” The Action alleges that such limitations are obvious based on the combination of Arndt and Kinsman. For the same reasons discussed above in connection with claim 1, Applicants submit that the proposed prior art combination fails and thus claim 13 is patentable over Arndt and Kinsman. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 13 under 35 U.S.C. § 103(a).

Independent claim 17 covers housings for light-emitting components that include, in part, a mount part that includes “an opening formed therein and extending completely through the mount part,” a “separately manufactured thermal connecting part disposed in said opening and fastened into said mount part … [and] having at least one chip mounting area,” and a “housing base body formed from a molding compound.” The Action points to chip carrier 2 and side surfaces 18 and 19 of Arndt as corresponding to the claimed “housing base body” (Action at page 2). However, chip carrier 2 in Arndt’s elements is a portion of leadframe 7, which is formed of metal, not of a molding compound as claim 17 requires.

Instead, Applicants submit that the most reasonable interpretation of Arndt’s disclosure with respect to the pending claims would assign foundation 10 in Arndt’s elements as corresponding to the claimed housing base body. Proceeding from this assignment, Applicants believe that leadframe 7 would then correspond most closely to the claimed mount part, and presumably, mounting plate 48 in Kinsman’s semiconductor package would correspond to the claimed thermal connecting part. As discussed above in connection with claim 1, Applicants do not believe there is any reason or suggestion in either Arndt or Kinsman to combine these references as the Action purports.

Nonetheless, even if Arndt and Kinsman were combined, which Applicants do not concede, the resulting elements would not be the housings covered by claim 17. Instead, as discussed above in connection with claim 1, the combination of Arndt and Kinsman would not yield a thermal connecting part (e.g., mounting plate 48 of Kinsman) *disposed in said opening* that extends completely through the mount part (e.g., leadframe 7 of Arndt), as required by claim 17. Mounting plate 48 would instead be merely attached to leadframe 7 via adhesive, not disposed in an opening of leadframe 7.

Furthermore, claim 17 requires that the thermal connecting part include “a thermal connecting surface thermally connectable from the outside” of the housing base body. If Arndt and Kinsman were combined as the Action purports, Applicants believe that the resulting element would not include such a surface. In particular, Kinsman’s mounting plate 48 would not extend beyond Arndt’s foundation 10. Instead, as shown in Figure 1C of Kinsman, mounting plate 48 would be completely enclosed within foundation 10 – no surface would be thermally connectable from the outside, as claim 17 requires. For all of the foregoing reasons, Applicants believe that claim 17 is patentable over both Arndt and Kinsman, and therefore respectfully request reconsideration and withdrawal of the rejection of claim 17 under 35 U.S.C. § 103(a).

Independent claim 52 covers leadframes for radiation-emitting components that include, in part, “a first electrically conductive component having a mounting region … the mounting region having an opening formed therein,” and a “separately manufactured thermal connecting part disposed in the opening of the mounting region … [and comprising] a reflector well surrounding said chip mounting area.” The opening in the first electrically conductive component “extends completely through the first component and the thermal connecting part extends through the opening in the mounting region.” The Action does not explicitly identify specific elements of Arndt’s devices with the claimed leadframe features. However, Applicants believe that, based on the foregoing discussion of claims 1, 13, and 17, it is reasonable to assume that the claimed first electrically conductive component corresponds to leadframe 7 in Arndt’s elements, and the thermal connecting part corresponds to Kinsman’s mounting plate 48.

Applicants first note that, as discussed above, there does not appear to be any reason or suggestion to combine Arndt and Kinsman as the Action suggests. Nonetheless, even if these references were combined, which Applicants do not concede, the result still would not be the leadframes covered by claim 52. In particular, mounting plate 48 would be attached to the underside of leadframe 7 via an adhesive, and would not be “disposed in the opening of the mounting region” such that it “extends completely through the first component,” as claim 52 requires.

Moreover, claim 52 requires that the thermal connecting part include “a reflector well surrounding said chip mounting area.” As explained above, Arndt’s leadframe 7 does not include a reflector well (even in the region corresponding to chip carrier 2), and Kinsman’s mounting plate 48 does not include a reflector well. Accordingly, the combination of Arndt and Kinsman would not yield a device that includes a reflector well surrounding a chip mounting area, as claim 52 requires. For all of the foregoing reasons, Applicants submit that claim 52 is patentable over Arndt and Kinsman, and respectfully request reconsideration and withdrawal of the rejection of claim 52 under 35 U.S.C. § 103(a).

Independent claim 64 covers radiation-emitting components that include, in part, a mount part including “an opening formed therein and extending completely through the mount part,” and a “separately manufactured thermal connecting part disposed in said opening,” where the “thermal connecting part extends through the opening in the mount part.” As discussed above, Applicants have been unable to find any reason or suggestion to combine Arndt and Kinsman in the manner the Action alleges.

Nonetheless, and for the sake of argument only, even if Arndt and Kinsman were combined (which Applicants do not concede), the result still would not yield the components covered by claim 64. Applicants believe that Arndt’s leadframe 7 corresponds most closely with the mount part of claim 64, and that Kinsman’s mounting plate 48 corresponds most closely with the thermal connecting part of claim 64, as discussed above in connection with claim 1. Given this assignment, Kinsman’s mounting plate 48 would not be disposed in an opening of leadframe 7 such that it *extends through the opening* as claim 64 requires. Instead, mounting plate 48

would be fixed to an underside of leadframe 7 with an adhesive – it would not extend into the opening in leadframe 7 at all. Accordingly, for all of the foregoing reasons, Applicants submit that claim 64 is patentable over Arndt and Kinsman, and respectfully request reconsideration and withdrawal of the rejection of claim 64 under 35 U.S.C. § 103(a).

Claims 2-4, 6-10, 15, 18-25, 27-28, 30-31, 33-40, 43-46, and 55-63 depend from one of claims 1, 13, 17, or 52, and are therefore patentable over Arndt and Kinsman for at least the same reasons. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of each of claims 2-4, 6-10, 15, 18-25, 27-28, 30-31, 33-40, 43-46, and 55-63 under 35 U.S.C. § 103(a).

Claims 12, 14, 41-42, 47-49, and 54 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Arndt and Kinsman, and further in view of one of Parthasarathi (U.S. Patent No. 5,650,663, “Parthasarathi”), Han et al. (U.S. Patent Application Publication No. US 2001/0054761, “Han”), Matsumoto et al. (JP 402187058, “Matsumoto”), Mahulikar et al. (U.S. Patent No. 5,608,267, “Mahulikar”), and Huang (U.S. Patent No. 6,664,649, “Huang”). Without specifically addressing the merits of each of the proposed combinations of references, Applicants note that each of claims 12, 14, 41-42, 47-49, and 54 depends from one of claims 1, 13, and 17. Claims 1, 13, and 17 are patentable over Arndt and Kinsman, as discussed above. Applicants believe that none of Parthasarathi, Matsumoto, Mahulikar, and Huang cures the deficiencies of Arndt and Kinsman with respect to claims 1, 13, and 17, and that claims 1, 13, and 17 are therefore patentable over all of these references.

For at least the same reasons, each of claims 12, 14, 41-42, 47-49, and 54 is also therefore patentable over Arndt, Kinsman, Parthasarathi, Matsumoto, Mahulikar, and Huang. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 12, 14, 41-42, 47-49, and 54 under 35 U.S.C. § 103(a).

In view of the foregoing, Applicants ask that the application be allowed.

Canceled claims, if any, have been canceled without prejudice or disclaimer. Any circumstance in which Applicants have: (a) addressed certain comments of the Examiner does not mean that Applicants concede other comments of the Examiner; (b) made

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Page : 9 of 9

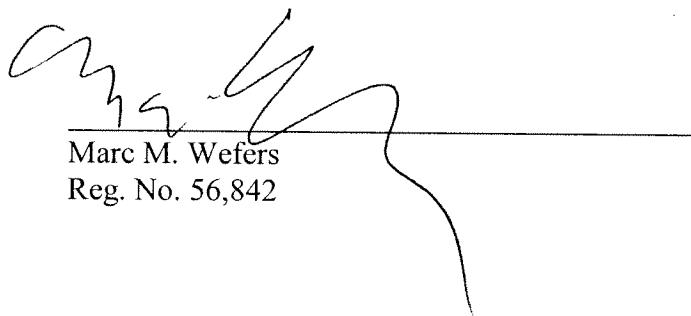
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arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims; or (c) amended or canceled a claim does not mean that Applicants concede any of the Examiner's positions with respect to that claim or other claims.

No fees are believed to be due. Please apply any charges or credits to Deposit Account 06-1050, referencing Attorney Docket No. 12406-0127001.

Respectfully submitted,

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